

An
Inaugural Dissertation
On
Hydrocephalus Internus;
By
Alexander Bryant
Virginia.

1824.

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Upon the authority of those whom age and education have
allowed to search the works of Antiquity, it appears that nothing
definite or positive can be gleaned in relation to hydrocephalus
internus. On the contrary, of the external ~~and~~ form, numerous
histories are to be found; and it would seem that this latter spe-
cies of the disease was of much more frequent occurrence among
the ancients, if we judge from their descriptions alone. But as
there can be assigned no perceptible cause or reason, why the exter-
nal species should have been confined to them, and the internal to
us, it appears to be the general opinion of writers, that the two
diseases were, in former times, often confounded. This opinion we
think finds support in the well known horror and antipathy to dis-
sections, impressed with us less than a religious scruple, upon the minds
of all in those days of darkness and superstition. But since
the diffusion of intellectual light amidst us, these "wild imagi-
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been removed, post mortem researches have been liberally conducted, and many discoveries valuable to our science and important to suffering humanity have been elicited. Hence it is among the moderns only, where dissections are tolerated and no longer considered sacrilegious, that the medical student is to direct his researches, and look with an eye of hopeful anticipation of being instructed on the true nature and treatment of hydrocephalus internus.

In order to secure perspicuity and system in this essay, I propose to treat of this disease under the two species of idiopathic and symptomatic, as being the division adopted by Dr Cheyne, whose invaluable paper on this subject, has laid me under many obligations, that I fear, will never be in my power to expiate; and which deservedly stands unswollen and unique.

Causes: Conformably to the division which I have adopted, I proceed to treat first of the idiopathic species, the causes of which are necessarily limited and few. Among the first of the predisposing or remote causes, youth itself is mentioned with considerable emphasis; and it would seem that the two periods of dentition are pas-

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that, I am happy to find a perfect coincidence with Dr. Rush
advanced from the present chair of practice in our university.
I will cite the ingenious Professor's own words. "This disease"
says he "improperly considered as a dropsy consists in over-
increased and altered action of the vessels of the brain, produ-
cing an effusion of water into the ventricles or some derangement
in its organic structure from the continuance of morbid impressions
on it." With such high authority as to the nature of hydroce-
phalus, I shall next proceed to post mortem researches.

With respect to its pathology, dissections discover the arachnoid and
pia mater to be inflamed: and since one of the results of
inflammation is effusion, I suppose that this condition of the parts if
allowed to progress unchecked, produces the serous exudation gene-
rally found in a greater or less quantity in the ventricles of all hydro-
cephalic patients. Had no more been done in this case (as Dr. Rush long
correctly observes) than when a serous effusion occurs from an inflamed
joint: Or, as I suppose, when vesicles result from the application of
Cantharides to any part of the body. Indeed the great analogy that
subsists between the development of symptoms in this disease and

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and those characteristic of inflammation, the beneficial operation of copious and repeated bloodletting, the size appearance of the blood when drawn, independently of dissections and nominal authorities are alone sufficient to reduce us to the above pathological views. And as they are applicable to any other species of dropsy whether occurring in the chest or abdominal cavity.

Symptoms: It is truly proteiform (as Dr. Baile ad mirably expresses) it is the display of symptoms in hydrocephalus, no one of them being invariable concomitants, that it becomes a task of no little difficulty to lay down any general description. Such being generally admitted by writers, I shall only trace the most prominent and striking features.

In the idiopathic species the disease is first recognized by pain in the head, a frequent and quick pulse, aversion to light and sound, proving the great irritability of the optic ^{nerves} ~~and~~ the child screams and starts seeks the recumbent posture, constant restlessness, with a rolling motion of the head, one or other of the hands is raised to the mouth, nose & head and easily returned - Towards the evening there is an evident exacerbation the pulse quickens and fuller, the countenance varies, the tongue

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particularly so. Of this fact, we have several demonstrations amounting to the clearest of certainty - that, that particular disease of the brain, called by B^r the phrenicula (and we would venture to say, with much propriety) but usually recognized under the title of hydrocephalus is for the most part confined to children. And for this phenomenon we have no better explanation than that of predisposition.

Hereditary organization is also in medical opinion, a remote or predisposing cause - as the Strumous diathesis, scrofulous or richely made - characterized by delicacy and beauty of frame, fair and rosy complexion, light sandy hair, irritability of temper, vivacity of disposition and sprightliness of intellect. To this opinion, my observations furnish support, have witnessed three cases of this disease all of which were strongly marked by the above features. In further illustration of this point: I am furnished with the following sad and melancholy intelligence by my distinguished medical preceptor B^r J. B. Traversham of Petersburg Va: who speaks from personal knowledge. That this disease has by its fatal ravages left childhood the inviolable ban of English surgery, Sir Astley Cooper of

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London, whose children (fine in number) were all preeminently
endowed with beauty, symmetry, intelligence, and purity of mind.
These facts, with many others, to name which would be superfluous
incontestably show the dependence of this species of the disease on the
influence of general habit.

Among the occasional exciting causes, are enumerated blows on the
head, falls by which the head suddenly impinges on any hard sur-
face, the irritation from dentition, and in fact every species of as-
cular or febrile commotion propelling or determining a preternatural
flux of blood to the delicately organized brain. In children, it has
been observed almost immemorially, that the brain is in an especial
manner apt to suffer and experience injury by all affections cre-
ating vascular emotions. Hence the frequency of convulsions in the
practice of all those who walk the circle of infantile complaints,
and the great necessity of keeping upon the medical world and di-
recting their most particular attention to the inflammatory diseases
of children. And no where does the old and well known adage, "an
ounce of prevention, is worth a pound of cure," apply more forcibly,
than in the physician's intercourse with what is called hydrocephalus.

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Disbelieving as I do that this disease can prevail epidemically, as some Writers are bold enough to assert I shall not stop to inquire into peculiarities of atmospheric constitution, but offer an answer to a very simple question, which I regret to observe, has been propounded by one indigenous to our own soil. These are the writer's words. "Why should not the membranes and vessels of the brain be under the influence of atmospherical causes, as well as those of the lungs, intestines &c? Because there is not that close and intimate sympathetic connexion between the external surface & the former, as there is between it and the latter. —"

Dr Ruiss, who merits our reading on this subject and from whom is the strong language of Dr Rush, emanated "the first dawn of light which has been shed on it," placed the proximate cause of hydrocephalus in a morbid flux or accumulation of blood in the cerebral vessels, sometimes arising into inflammation and terminating in effusion. This making a very near approach to the present adopted opinion, was deserving of much respect and attention. ~~from the present~~ For it probably led to something more satisfactory and conclusive. Dr Cheyne, to whose excellent work

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on this disease I have respectfully alluded to) placed the proximate cause in venous congestions, ^{in addition to increased arterial action} and states that the effusions in all cases, arises out of this state of things.

The late Dr. Rush of our own Country, was among the first to turn aside the veil of error, which had so long shrouded in gloom and darkness the medical mind; and thus gloriously co-operated in admitting that light, which has so eminently brightened the pale of our Science. He proposed a mind too independent, proud, and daring to continue in a route blind and defective to retain a theory which dictated a practice feeble and inefficient; and by an innovation that directed medical attention to the vascular activity of the ~~substantia~~ brain, has enriched very much the catalogue of infant mortality. This is the language of this champion of physic. "It more occurs in this disease than takes place when hydrothorax follows an inflammation of the lungs, or when serous effusions follow an inflammation of the joints."

I will only further remark, in allusion to the proximate cause of hydrocephalus (which I conceive to be the disease itself) that

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for the most part free and clear, when pupure is made upon the epigastrium the child is observed to wince, indicating great soreness and tenderness in that region - this latter symptom is by many, and I think correctly, referred to sympathy, as being extended from the brain, there is also great prostration of strength, the digestive functions are very much impaired, and the discharges are slimy and fetid. The urine is high coloured, making a white or glazing deposit. During this stage of irritation (as it is called) the eye betrays great morbid sensibility, the pupil being usually closely contracted. In the second or more advanced stage, as effusion takes place, the pupil dilates, is gradually deprived of its lustre, till finally strabismus ensues, with convulsions of the whole frame. The duration of the first stage is very uncertain varying from days to weeks. This stage, often from its excessive violence, closes the tragic scene without any relief or protraction of the case by effusion. The when a mitigation of the symptoms does occur, we may strongly apprehend effusion, and as consequent on it, a diminution of vascular activity. This effusion progressing, soon produces compression, made known by symptoms of stupor, grinding of the teeth, convulsive jerks, projection of the eyes, strabismus, blindness, suffusion of the orbital, bloated cheeks,

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apoplexy and death. As has been before observed these symptoms are
irregular and changeable. When most violent they are said sometimes
to remit, every thing assumes a favourable aspect, and the anxious
parent is inspired with the pleasing hope of a speedy recovery.
But alas! these fond and endearing anticipations are too soon and
too often blasted by the chilling sight of tokens fraught with pale-
faced mortality. The joyous scene of a lengthened existence is now
changed into the bloodless cheek of death, and all hopes are put to
flight. Authors thus explain these tantalizing remissions - that deter-
minations from the compressed organ take place - hence saturation has
been known to act thus also the establishment of an issue, the discharge
from a blister, and oedema of the lower extremities may produce the
same flattering effect. This explanation of this phenomenon is the most
satisfactory of all that I have seen and carries with it much plausi-
bility.

There appears to be a concurrence of the ablest authority of the present
day, that effusion is merely the effect of the morbid action in the cap-
sule of the brain. Nor is it a necessary or uniform one, since dissections
have shown inflammation with little or no effusion, and vice versa.

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For this fact, I refer to Dr. Rush's Inquiries II vol. Page 226. In the for-
mer of these cases death must be the result of excess of excitement or engorge-
ment. Not doubting but that cases have lived along time, when there
was a small portion of effused fluid in the brain, as some authors opine
I at the same time believe that when a quantity amounting to compression
has been eliminated, death must inevitably ensue. For this is, and
must necessarily be, a fatal occurrence.

Having done with the first or idiopathic species, I go on to describe
the second or symptomatic. This species of hydrocephalus is of
much more frequent occurrence, and yields much more readily to
our remedial measures. So intimate is the nervous relation between
the digestive and cerebral organs, that some writers describe the nature
and treatment of this affection as being universally secondary or con-
secutive. So far am I inclined to this opinion, that the proportion
of one hundred of the consecutive or symptomatic, to one of the idio-
pathic would not be an unfair representation. For the remarkable
delicacy of cerebral organization, its vivid sensibility, the immense
crowd of impressions transmitted to it, and the well established sym-
pathy between it and the digestive apparatus all lend strong sup-

support to this view
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support to this view of the question. In Dr Cheyne's treatise on hydrocephalus, ample evidence is to be found in favour of its being in a very large majority of cases, symptomatic of chylotropic derangement. In truth, so ample and undoubted are the illustrations of this fact occurring in every ones practice, (especially in that of the Southern physicians, where remittent and inflammatory fevers are common), so generally is it adopted and taught by our highest authority, that it would be taxing the patience of the learned readers of this essay, should I seek for much further additional testimony. I shall therefore subjoin the following three articles, and dismiss the point for the present.

1st. That many cases displaying the most prominent features of hydrocephalus have willingly submitted to active mercurial purging. I would be understood in the use of this medical term, only to mean that peculiarity of cerebral inflammation called by Dr Rush, phrenicula, and which, if unabated, will either destroy life by the excess of excitement, or terminate in hydrocephalus (which is the consequence of this inflammation and not the disease itself) and finally death.

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2nd That symptoms of evident disorder of the digestive functions, such as anorexia, constipation, melancholy, clayey stools, dry harsh skin &c, have been followed sooner or later by hydrocephalus. The practice of my able preceptor Dr P. B. Machan of Petersburg Va: furnishes very weighty testimony to this fact.

I am now visiting a similar case in the Petersburg Almshouse, a recently organized Institution, and to which the gentleman above mentioned is attending physician.

3rd: That symptoms of hydrocephalus have often yielded to a course of mercurial purges, prescribed with the view of establishing healthy action in the functions of digestion. Besides it is evident to the mind of every physiologist, that congestions of the liver the presence of irritating faeces, and such like, will destroy the healthy equilibrium of circulation, and throw an undue proportion of blood upon the brain, which being very delicate and naturally irritable, will readily take on this species of morbid action. For there is no health in the adage "ubi fluxus ibi irritabilitas" than "ubi irritatio ibi fluxus"

Hydrocephalus Symptomaticus is very insidious in its incipient

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stage and demands for its detection the minutest observation and the strictest attention. Among the premonitory symptoms I shall enumerate languor, disturbof countenance, drowsiness, Spleen, loathing of food, nausea, occasional vomiting, collapsed features, harsh dry, hot skin, tongue loaded with a white fur, a dark streak under the eyes, pulse quick, tense and full, sharp pain in the head, usually immediately over the eyes, there is also a sense of stiffness in the back of the neck, and sometimes between the scapulae, urine high coloured, and unnatural alvine discharges. This condition of things, progressing, there comes on soreness and tension of the epigastrium, the sleep is much disturbed by frightful dreams, causing the child to start and scream, there is very rapid emanation, pushing of the teeth, picking at the nose, and soreness or great sensibility of the integuments of the cranium.

These symptoms continuing for a few days there is a superincumbence of what is called hydrocephalic irritation, thus indicated - the axis of one eye is turned towards the nose, the pupil in this is more dilated, the pulse is frequent and the breathing quick and laborious there is also some perspiration, tho' without throwing any check upon the

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pulse or lessening the violence of any one symptom, and in the case which I saw in the Petersburg Almshouse, and to which I have before alluded, on the 7th day, there were formed on the skin numerous watery vesicles, particularly thick on the breast, neck, and hands. This phenomenon is, I believe, no where mentioned by authors, as accompanying this disease, and may be considered one of nature's anomalies. The disease now undergoes an evident change, and assumes what is described as the second stage - the pulse grows slower, irregular and intermitting, the violence of all the symptoms seems to abate, and the restlessness before observed is now followed by the most profound torpor, strabismus, great dilatation of the pupils, and little or no sensibility to light.

The post mortem researches that have been instituted on patients, dying of symptomatic hydrocephalus, show in addition to the usual appearances of the brain, the intestines and stomach to be inflamed. M. Lacunec, a continental physician whose pathological discoveries entitle him to a Laurel, the roots of which it should ever be our subtlest pride to water and refresh, has, by a series of well conducted dissections, aided by Newtonian patience and

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the magnifying power of the microscopic glass, discovered minute tubercles granulations on the cerebral and cerebellar surfaces in meninges, and other appendages of the brain. Admitting this to be true, we have at once much of the mystery dissipated that so long embarrassed the physicians mind, in his inquiries concerning hydrocephalic predispositions. In concluding our pathological remarks on this death-fraught malady, we would give encouragement to all those whose efforts have brightened our views not of this only but of all morbid affections and with sincere hope, that those in our own country, whose office it is to prescribe and conduct dissections, may be stimulated by that noble ambition which should swell every American bosom, and spurred on with the pleasing anticipation of making new acquisitions to this most important branch of medical science, thereby multiplying the resources of the profession.

Diagnosis. In the early stage of hydrocephalus, it demands no slight powers of discrimination to trace the line of demarcation between it and the pernicious fever an affection by no means uncommon among children. But in its further progress the dis-

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distinguishing marks are more evident. For those of advanced hydrocephalus, are so completely (*dei generis*) that to confound them with any disease, would reproach the physician either with the greatest neglect or dullist perceptions. For who could misapprehend the following case. A child rolls its head, & fans the air with one or both hands, clasps them closely around its head, with the hectic blush on the cheek, alternating with the most deadly ~~palor~~ quick, voluminous, incompressible pulse, great morbid sensibility to light, a disinclination to the erect posture, eyelids half closed, dilatation of one or both pupils, strabismus, staring, and screaming at the slightest noise?

Prognosis: The patient evincing great pain and uneasiness on being raised in bed, deafness (which as before observed is often accompanied with stupor), widely dilated pupils, strabismus, apoplectic stertor, laborious and accelerated respirations, dulness of vision, feeble, quick, intermitting pulse, and involuntary convulsions, are considered as infallible precursors of death.

Niltho dus mendum: It is natural for the physician to be controuled in his practice by the theoretical notions that he

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may entertain respecting the nature of disease. And this
circumstance in many instances has been productive of in-
calculable mischief. Nor are the pages of our science totally
exempt from errors to which our works on morbid anatomy
have conducted her followers. Nor are ^{we} without instances, where
our pathological views, for the most part, (sure guides) have
led to an improper and pernicious practice. Hence in the ma-
nagement of hydrocephalus, the circumstance of water being found
in the ventricles has been looked upon as the cause of all the
symptoms, and consequently its removal or absorption as the
prime indication of cure. Perseveringly to adhere to any par-
ticular set of notions will and must almost invariably lead
to a hurtful and prejudicial practice. And in order to secure
a victory over this, as well as most other diseases, we cannot
too steadily bear in mind the sympathetic relation coupling
more or less firmly all the various parts of our complicated or-
ganism. In exemplification of this phenomenon, we are taught
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except by directing our remedies to the uterine organ. The chief source of the complaint. Also that intestinal disorder may by a similar dominion over the brain, excite a morbid affection in that organ. Hence the great necessity of scrupulously examining every individual symptom, singly and collectively, the condition of every organ and function of the body by which we are empowered to trace the disease, step by step from its primary source to its ultimate effect. It was the unerring practice of the great father of American Physic boldly and independently to prescribe and direct his remedies to existing symptoms, uttering regardless of the diamonds of the schools.

In our intercourse with hydrocephalus, our remedies are to be directed to the head or abdomen in proportion to the urgency of symptoms, remembering that in a great majority of cases functional derangement of the abdominal viscera is the primary link in the chain of morbid associations. Whether idiopathic or symptomatic and by whatever cause induced, hydrocephalus internus is manifestly an inflammatory disease attended with local determinations. Hence the propriety of Dr. Thomas' location

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Our first indication in hydrocephalus is to subdue inflammation, by which we prevent effusion, and this is best effected by the strictest adherence to the antiphlogistic plan thro' its entire extent. But to be more particular, we should make an early adoption of the lancet, and measures to evacuate the alimentary canal, a recurrence to which must be tempered by the obstinacy of the case. At the same time the application of leeches or cups to the temples, and a blister over the head are found to be powerful auxiliaries. These remedies are to be continued so long as there remain symptoms of inflammatory action in the cerebral vessels, or so long as there are signs of local congestion. By a writer of no small respectability is maintained the eligibility of detracting blood from the temporal artery or jugular vein. And I am more inclined to believe in the superiority of this practice, since it is that of my ingenious preceptor who informs me, that in very many cases, he has had the satisfaction to witness the complete victory of simply tying the jugular vein (which he prefers to the Artery) and permitting

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and with much
tongue, foetid breath,

the blood to flow untill a determinate impression is made on the system; over every symptom of hydrocephalic irritation. I suppose that the greater efficiency of this operation may be referred to the very short time in which a large quantity of blood is drawn off. For it is an established principle of all inflammatory affections, whose blood-letting becomes the Sampson of cure, that the benefit to be derived from this operation bears a regular proportion to the time required. Thus the detention of blood rigidly pursued in its various forms will seldom fail to check the inflammatory stage, tho' if this prime agent be neglected at the onset till effusion supervene, it is the opinion of experienced practitioners that a thousand cases to one will foil the ablest skill.

In cooperation with blood-letting we are not to neglect purgatives, for they are eminently calculated to give determinations to the head, and will therefore not only be proper but absolutely indispensable; and more especially so, if the case be accompanied with much abdominal disorder—As tense abdomen, foul tongue, fetid breath, intense thirst, clay coloured or dark and slimy

Dr. H. Indeed the
authorizing and is
the case is more
clear. but when the
indications for the
for the purpose of the
two-fold
contains the ~~words~~
the
existing contents,
actors. To this end
blowing powder, of
at salutation shown
this are thoroughly
and exist a very im-
negative medicine
raising the merit is a
the taste of potash
opposite gambogeide
considerable ^henthusiasm
shows management.

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stools &c. Indeed the purgative plan has for its support very
able authority, and to this opinion I willingly yield assent
when the case is more of a symptomatic than idiopathic
disease: but when the latter I must beg leave to express my
predilection for the lancet.

For the purpose of purging, we are directed to select those remedies
combining the ^{two-fold} ~~double~~ power of emptying the intestines of their
irritating contents, and, at the same time, promoting healthy
secretions. To this end there is nothing better adapted than the
following powder, of the protochloride of mercury + pulv. Jalap.
vel palonatum rheum, equal proportions to be repeated untill the
bowels are thoroughly evacuated. Among physicians there would
seem to exist a very wide discrepancy of opinion respecting the
purgative medicines to be employed in hydrocephalus. Some
awarding the merit to the protochloride of mercury, some to the
super tartate of potash, some to the conv. jalapa. some to the Sta-
lagmatis gambogides, and of late has been recommended with
considerable enthusiasm the Oleum Croton Tigliæ, all of which, by
judicious management and suitable combinations, may be made to

is a very important
upholding the testimony
with my own observation
because I have used
largest antimony, and
iron in this disease
by diminishing the detritus
of the intestines, often a
large accumulation, and
it is stated, especially
in the case of the
case of Rush, & Heyn
it is not required.
Stomach, the
the symptoms square
and some discharge
Physician Dr. F. S.
relatively on the stomach
it is out of mine

to answer very important indications. But by impartially weighing the testimony, in professions, oral and written, together with my own observations, I am inclined to believe that the mercurial purges united with very minute doses of the tartarized antimony, are pre-eminently suited to our purpose, as evacuants in this disease. When prescribed in the commencement they diminish the determination to the brain, they arouse the torpor of the intestines, often a very obstinate symptom, they remove the foul accumulations, and rectify the secretions, invariably more or less vitiated, especially that of the hepatic gland. In further confirmation of the purgative practice we have the unanimous voice of Rush, Cheyne, and Osier, than whom higher authority will not be required. We are told by these gentlemen, that the disordered stomach, the dilated pupil, the comatose tenacious and other symptoms equally to be apprehended, readily yield to copious saline discharges. It is the practice of a respectable physician Dr L. F. Mettleur of Philadelphia: to rely almost exclusively on the strongest mercurial preparations, who informs me that out of nine well marked cases of hydrocephalus

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In accordance with
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acute disease. The
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he has never had the misfortune to lose but one, and
that loss he very satisfactorily traced to imprudence in
diet. On the intervals of purging, which if drastic, should not
be too steadily pursued lest there be kept up in the digestive organs
too great a degree of irritation, it is advised, and we think very
correctly, to exhibit minute doses of the protochloride of mercury
combined with the pulvis antimonialis in doses of the former
gr.ss of the latter gr.ij to be made into a powder and given every
three hours thro' the day. This practice will remove all redundant
and secretions and induce healthings in the mucous coat of
the intestines.

In accordance with the high authority of professor Chapman
emetics may be beneficially employed in what I have called
the symptomatic species, or that originating in deranged chyl-
poietic viscera. This illustrious author proceeds to affirm that
he has known cases of well marked hydrocephalus to be com-
pletely conquered by the operation of a single purge. Altho' this
practice would at first sight seem harsh and dangerous, yet gui-
ded by experience and discrimination, it appears reasonable to

is allowed, might for
should there be much
silly leeches, cups,
phlebotomy is recommended
but the well being
of the animal
the physician's atten-
tion is continued
as how suggested
is the best discharge
from which this phre-
not clearly appear, a
frustrated and violent
disposition are
temporary which is
but it is recommended
several days after
but I acknowledge
see Dr. J. W. M.

to allow, might prove of vast utility in very many cases. Should there be much fullness or pain in the hepatic region we should apply leeches, cups, or a blister to be kept discharging untill the symptom is removed. For it cannot be too steadily borne in mind that the well being of this viscus is a line qua non to the integrity of the animal economy, and cannot receive an excess of the physicians attention, particularly in the arid states of our wide continent, where it is most apt to be affected. It has also been suggested to apply a blister along the nape of the neck, to be kept discharging by linen vitriol. Whether the pathology from which this practice is deduced be correct or no does not as yet clearly appear, and must remain a subject of future research. Constant and violent pain of the head is to be relieved by a blister whose dimensions are to embrace the whole of the cranium. To obviate strangury which is often a troublesome symptom of a blister to the head, it is recommended by professor Chepman to shave the head several days previous to its application. It is with much pleasure that I acknowledge myself indebted to my distinguished acquaintance Dr. R. Mitchell, of Philadelphia, for the following infor-

information, which
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with suppurations of
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information, which upon his authority will have the same
desirable tendency. viz. either to wash the surface with laudanum
before applying the blister, or make the patient drink of flax-
seed tea with a little extract of potash dissolved in it. The
blister is not to be removed under the time of thirty six hours or
until suppuration of the scalp is established. If the blister
by any insurmountable circumstance, be interdicted, then make
cold applications to the head as singar and water, ice water, and
even bladders of pounded ice itself have been applied with the
clearest manifestations of benefit to the patient. Frictions along
the spine with strong mercurial ointment is highly recommended
and seems in many cases to have been followed by very happy
results. From its known diuretic and sedative powers digitalis
as a remedy in hydrocephalus excited at one time very flattering
expectations, but it seems now that confidence in it is nearly quite
exhausted. May not this relinquishment of the article be unwarranted
and premature? After having premised with topical and general
blood-letting, may it not by its specific power to reduce inor-
dinate vascular action afford a fair opportunity for the full

and unaccountable
to most approved ones
from 1788 to 1800
to those until its
throng thus, as they
believed in what is
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a variety of attack
undergoes no change
the only remedy in
confidence is the
now laid, interpreted
last stage has been
the separation of
continued is indicated
reluctance of every
from his conduct
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and uninterrupted operation of our mercurial purges?
The most approved method of its administration is to begin with
from gr^{ss} VIII to ℥ of the saturated tincture, gradually increasing
the dose, untill its effects on the system are made manifest.
Having thus, as I hope, gone through the most approved practice
pursued in what is called the first stage of hydrocephalus
I proceed next to say something for the second. In those un-
fortunate cases where from neglect, timidity of practice or ma-
lignancy of attack, the inflammatory march of the disease
undergoes no check, and symptoms of effusion supervene
the only remedy in which we can repose the slightest degree
of confidence is that Champion of the Matera Medica, Mer-
cury in bold, intrepid, and fearless hands. When the progress of the
first stage has been rapid, this state of things usually occurs
at the expiration of the twelfth or fifteenth day, and as before
mentioned is indicated by great tranquility and apparent
ameliorations of every symptom. The practicability of a recov-
ery from this condition of the brain has been, and is by many
of the present day considered highly problematical. upon the

present that there are
no opposed fluids. But
has demonstrated the
principles as to deny to
the brother and brother
repeated injections
has not yet succeeded
in his phenomenon. But
at this point, it is said
a whole premature death
in the medical world
wants dissection and
the discovery or at least
of absorbents in this
removal during his life
admitting however that
this is an analogy for
the brain is as natural
as the system of

ground that there are no absorbents in the brain to remove
the effused fluid. But to assert that because they have not
been demonstrated, therefore none exist, is as much a petiti-
o principii, as to deny the vascular communication between
the mother and foetus in utero, because our most careful
and repeated injections, in the most skillful hands, have
never as yet succeeded in making an ocular display of
this phenomenon. But what will go to undermine every objection
on this point, it is said that the late Dr. Lawrence of Philadelphia
(in whose premature death we deeply condole with his relations
and the medical world particularly) had by a series of very
minute dissections and observations on the brain and its meninges,
either discovered or at least made very probable the existence
of absorbents in this viscus. His death however lamentably
occurred during his engagement in this laudable enterprise.
Admitting however that this discovery never has been made,
we find in analogy very ample support for the assertion, that
the brain is as naturally and necessarily endowed with absor-
bents, as is the system generally with sanguiferous vessels.

But we now enter
harrow, by reason
of Magendie of
noting attestations
of Philadelphia
show that the brain
is the important part
In myself, I believe
around stage of hyper-
inaccessibility, there
With such an endeavour
side, we are not to
patients, even in the
we encouraged to
in all its various forms
most extent. That is
during the necessary
narrowing the water.
the crumbling stage

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But we now easily surmount this heretofore insurmountable barrier, by recurring to the late very valuable experiments of Magendie of France, which independently of the confirmatory attestation of Doctors Laussance, Coates and Haslam of Philadelphia, indisputably and most conclusively show, that the veins are gifted with the faculty of performing the important function of absorption.

For myself, I believe, that the comparatively few cures of the second stage of hydrocephalus, are rather attributable to their inaccessibility, ~~than~~ the want of cerebral absorbents.

With such an indisputable chain of evidence then on our side, we are not to abandon the bed side of our little patients, even in this terrific state, but on the contrary we are encouraged to employ our dernier resource, Mercury in all its various forms of administration and to its utmost extent. That this grand agent has succeeded in exciting the necessary degree of action in the vessels of the brain, removing the water and snatching the patient, as it were from the crumbling verge of the grave, we have only to refer to

Victims Personal
usually respectful
to be effectual
particular as the
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more forcible than
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agency of this ^{the} ten
in one case near
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Doctors Percival and Dobson of Europe and several others
equally respectable more immediately at home. In order
to be effectual it must be exhibited internally in a large
quantities as the stomach and bowels will bear and ex-
ternally the ung-hydrag-fort- is to be diligently insin-
uated by constant frictions. Less than this in language
more forcible than my own, "is to trifle with the remedy,
and to cut off the only chance that the patient had of
escape."

In exemplification of the victorious power of Mercury thus
used in that stage of the complaint literally called hydro-
cephalus, Dr Caldwell, in his notes to Dr Collins V. II. p. 383.
relates two cases which came under his immediate observation,
and both of which, he states, were overcome by the ~~on inspection~~ ^{beneficial} ~~agency~~
agency of this ^{remedy alone} ~~remedy alone~~, presented as above recommended.
In one case nearly nine pounds of the strongest ointment
were rubbed in during the short space of fifteen days - the
child having been kept from the first development of these
terrour-bearing symptoms thoroughly enveloped in flannel clo.

clothing highly
to some number
the authority, I
do think, that it
some is wanting
since has been
Hathorn Septics
is really, now

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clothing highly charged with it. We have it in our power
to annex numerous other cases, handed us by unimpeach-
able authority, illustrative of this valuable fact, did we
not think, that it would be merely admitting light when
none is wanting; and did we not ^{also} think that a suffi-
ciency has been said to remove from the minds of the most
stubborn sceptics, that imagined midnight, when all is,
in reality, noon and sunshine.

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